

REMARKS

The rejections under 35 U.S.C. 103, and the Examiner's comments in support of same, have been thoroughly considered but are believed insufficient basis to withhold allowance.

Examiner's New Assertions Analyzed

At the threshold, this opportunity is taken to address two central contentions which pervade the Examiner's "Response to Arguments" beginning on page 6 of the Office Action, as follows:

First Contention – The Examiner disputes "(A) that the poly(oxyethylene) poly (carbonyloxyethylene) acrylate-based polymer of Chang et al does not read on the presently claimed copolymer surfactant", and argues instead that "the present claims do not exclude the carbonyloxyethylene moiety of Chang et al." While not acquiescing in the Examiner's argument, applicant has amended the claim language to replace the limitation that each said surfactant monomer

is an acrylic or methacrylic ester moiety joined to a hydrophobic moiety by a poly(ethyleneoxy) moiety

by a definition of the recited surfactant monomer as

an acrylic or methacrylic ester moiety joined with a hydrophobic moiety by a bridging group consisting essentially of a poly(ethyleneoxy) moiety.

Though applicant's position remains that the surfactant monomer taught in Chang et al. is outside the unamended terminology, it is submitted that the new language – which reflects an approach different from that of the prior terminology – clearly excludes the Chang et al. moiety. More specifically, the Chang et al. teachings require the utilization of "polymerizable alkyl poly(oxyethylene) poly(carbonyloxyethylene) acrylates." Defining their copolymer surfactant in

an alternative fashion, applicants now use wording that is recognized in the case law as excluding the “poly (carbonyloxyethylene)” unit taught in the Chang et al. patent. That is, applicants’ claim language as amended excludes the Chang et al. “poly (carbonyloxyethylene)” unit because under prevailing precedent recitation of the expression “consisting essentially of” closes the claim language to any element which would materially affect the basic and novel characteristics of the invention. For this proposition, applicants rely upon *In re Garnero*, 412 F.2d 276, 162 USPQ 221 (C.C.P.A. 1969). There, the relevant issue was whether the limitation “consisting essentially of expanded perlite particles which are interbonded to one another by interfusion between the surfaces of the perlite particles” excluded prior art compositions in which perlite particles were bonded using a sodium silicate binder (“Thomas”) or a lime binder (“Pierce”). The *Garnero* court confirmed that “the ‘consisting essentially of ***’ terminology would ... exclude additional unspecified ingredients which would affect the basic and novel characteristics of the product defined in the balance of the claim.” 412 F.2d at 279. Ruling that the “consisting essentially of” terminology *did* exclude the above-mentioned prior art, the court held

However, to follow the teachings of Thomas combined in any manner with Pierce, would require the presence of at least one additional material with the expanded perlite, whether it be the sodium silicate binder of Thomas or the hydrated lime which Pierce uses to provide a chemical joining action. In either event it cannot be said that the additional ingredient would not materially affect the basic and novel characteristic of appellant’s product which is that the perlite particles are held together without any additional material.

Id.

In the instant Application, the Examiner contends that Chang et al. teaches a “poly(oxyethylene) poly(carbonyloxyethylene) acrylate-based copolymer”, and that the claim

language (prior to amendment) “is open to other moieties, including the carbonyloxyethylene moiety of Chang et al.” (Office Action dated August 28, 2007, page 6). But, applicants’ insertion of the term “consisting essentially of” leaves no doubt as to the claim language’s exclusion of the Chang et al. moiety. More specifically, Chang et al. expressly identifies the presence of “the polymerized units of alkyl poly(oxyethylene) *poly (carbonyloxyethylene) acrylates*” (emphasis supplied) as providing “markedly greater viscosity” (col. 3, ll. 12-17). As will be established hereinafter, a focus of applicants’ claimed invention is the mitigation of viscosity-increase, or thickening. In contrast, the “carbonyloxyethylene moiety” of Chang et al. is taught therein to cause a marked viscosity-increase, which clearly would affect - indeed, undermine - a basic and novel characteristic of the invention, i.e., mitigation of viscosity-increase. Therefore, under *Garnero*, the unspecified “carbonyloxyethylene moiety” of Chang et al. is excluded by recitation of “consisting essentially of”, and the claim language is not “open” to such moiety. Accordingly, the Examiner’s contention that “the present claims do not exclude the carbonyloxyethylene moiety of Chang et al.” is mooted.

Second Premise - The Examiner’s contention that “Chang et al. does not necessarily teach away from the presently claimed viscosity stabilization properties” is traversed.

To substantiate their point, applicants present herewith a declaration of Dr. Yong Yang, one of applicants and an employee of an affiliate of applicants’ assignee, to place in the record information which is indicative of the patentability of applicants’ claimed invention. Thus, in the declaration, Dr. Yang comments on

I. The “significance of $\pm 10\%$ ” – Dr. Yang explains this parameter (i.e., “about $\pm 10\%$ ”) is a range within which Stormer low-shear viscosity is kept according to the invention, and further that a variation of about $\pm 10\%$ for the viscosity of a latex paint

composition is viewed in the industry as negligible, such that viscosity is considered to be essentially unchanged. According to the declaration, range of $\pm 5-7\%$ is typically the target for maximum viscosity variation; about $\pm 10\%$ was selected to compensate for slightly increased variation due to manufacturing error.

II. Chang et al. paint viscosity – In the declaration, a test of the effect on viscosity of applicants' copolymer surfactant is chronicled. The evaluation was conducted along the lines described in Chang et al., namely, by measuring viscosity when a 1% aqueous solution of the copolymer in question is made. With a copolymer surfactant encompassed by the claim language as amended, thickness was 28-74 centipoises ("cp"). Concerning the prior art, British Patent No. 870,994 - discussed in Chang et al. as background - indicates that thickeners disclosed therein cause viscosities of 24-625 cp, using a 1% aqueous solution of the copolymer in question. By way of contrast, thickeners disclosed by Chang et al. – incorporating a poly(carbonyloxyethylene) moiety – are reported to cause viscosities of 2730 and 23,500 cp, respectively. Chang et al., at column 3, lines 17-21, represent that with their technology "markedly greater viscosity" is obtained than with the referenced U.K. patent. Since the invention claimed by applicants herein yields thicknesses at the lower end of the U.K. patent range, it follows that the Chang et al. materials likewise result in "markedly greater viscosity" than with applicants' invention.

Turning to the Examiner's reasons (Office Action dated August 28, 2007, pages 6-7) for discounting applicants' arguments advanced in the papers filed April 26, 2007 and June 1, 2007, respectively, applicants traverse because:

(A) As discussed already, the copolymers of Chang et al. are outside the claim language as amended. Therefore, the contention that "the present claims do not exclude the

carbonyloxyethylene moiety of Chang et al.”, responding to Applicants’ argument (A), is inapplicable.

(B) As to the multiple criticisms set forth regarding Applicants’ argument (B):

(1) The significance of the “about $\pm 10\%$ ” variability for viscosity is explained in the accompanying declaration, i.e., it defines a range of commercially inconsequential viscosity change, namely, a slightly expanded version of the conventionally $\pm 5\%$, to compensate for typical error. Confinement within about $\pm 10\%$ is tantamount to stable viscosity. Thus, the Examiner’s position – that without “knowing the significance of $\pm 10\%$, ... any thickening given by the surfactant copolymer of Chang et al. falls within the range given” – is obviated. In combination with the position’s premise having been rendered inapplicable, the teaching of Chang et al. is shown to be counter to applicant’s claimed invention, inasmuch as the former relates to materials having a potent viscosity increasing effect whereas the latter involves mitigation of viscosity change. Thus, Chang et al. teach away from applicants’ invention.

(2) The notion that the “surfactant copolymer” of Chang et al. can be used in such manner that it “would not necessarily increase the viscosity of an aqueous latex paint” is untenable. The whole point of the Chang et al. patent is to bring about very pronounced thickening, and to hypothesize practicing Chang et al. instead to mitigate viscosity-change (rather than significantly increase it) nullifies the central assumption of the patent. Distorting the teaching of the prior so much that it is destroyed in order to support an obviousness rejection is impermissible. Ex parte Hartman, 186 U.S.P.Q. 366, 367 (Bd. App.1974). On this basis also, Chang et al. teach away from applicants’ invention

(3) Furthermore, the correlative notion that “the final viscosity of the aqueous latex paint ... could be readily and easily controlled by one of ordinary skill in the art to obtain the desired viscosity of the ... paint “ is also untenable. The Chang et al. patent simply contradicts the notion that its copolymer surfactant can be used to mitigate viscosity change. In particular, Chang et al. emphasize that their copolymer is a thickener which is potent. The extreme viscosity-enhancement capability of their copolymer is clear from the fact that they disclose achievable levels between 2,730 and 23,500 cp; this is orders of magnitude greater than the viscosities reported in the British Patent, 24 to 625 cp, or in the accompanying declaration for applicants’ claimed invention, 28-74 cp. It would contradict the essential thrust of the Chang et al. patent to transmute its teachings of radically increasing viscosity into a technology involving confinement of viscosity-increase to a negligible amount. Once again, Chang et al. teach away from applicants’ invention.

(4) The contention that the “surfactant copolymer [of Chang et al.] is used to thicken the colorant composition and not the latex paint which is prepared from the colorant composition” is unavailing. On the one hand, if the Examiner means to found the rejection on a portion of the Chang et al. patent not ultimately connected to thickening of a paint, then there appears to be a *non sequitur*. On the other hand, in the event the Examiner means the Chang et al. patent does not disclose thickening of a latex paint, that proposition seems incorrect. For instance, at column 7, lines 33-36, Chang et al. explicitly represent that “the thickeners described here are useful in ... latex paint formulations”. And, irrespective of how the Chang et al. thickeners end up in a latex paint, their thickening effect would have been expected to be very substantial, based on the disclosure in the Chang et al. patent of providing “markedly greater viscosity” than the British patent therein discussed (col. 3, ll. 12-17). Note especially the “orders

of magnitude” greater viscosity-enhancement effect of the Chang et al. patent’s surfactant copolymers vis-à-vis that of the aforementioned U.K. patent, and that of applicants’ tested copolymer surfactant.

III. The contention, in response to Applicants’ argument (C), that “applicants’ data ... is not a proper comparison to the closest prior art” reflects a misunderstanding of applicant’s position. That is, applicants were not attempting to prove unexpected results vis-à-vis the prior art by comparison with TT-395, as the latter is believed by applicants to be a surfactant which would result in a colorant composition within the invention as claimed. Rather, the data regarding TT-395 were highlighted to disclose varying results with different embodiments of the subject matter claimed by applicants. As such, the data do not bear on the obviousness issue.

In view of the foregoing, it is submitted that the §103 rejections set forth in the Office Action are not applicable because:

(A) Chang et al. – The patent relied upon fails to teach the copolymer surfactant prescribed in applicants’ claims, because Chang et al. require copolymers wherein the surfactant monomer’s bridging moiety poly(coxyethylene) poly(carbonyloxyethylene) while applicants utilize a copolymer wherein the surfactant monomer’s bridging moiety excludes poly(carbonyloxyethylene). Furthermore, applicants’ claims specify a viscosity variation of no more than about $\pm 10\%$, which is tantamount to viscosity stabilization, whereas Chang et al. affirmatively teach viscosity-enhancement of an “orders of magnitude” greater amount, and (correspondingly) potent thickening. Applicants’ claimed invention would not have been obvious from the Chang et al. patent because the invention requires a copolymer surfactant

mutually exclusive of Chang et al.'s (due to the aforementioned difference between the respective surfactant monomers incorporated therein) and provides a "viscosity stabilization" result taught away from by Chang et al. (who emphasized pronounced thickening or viscosity increase).

(B) Chang et al. in view of Carpenter et al. – The Chang et al. patent's deficiencies are explained in (i). Carpenter et al. fail to provide sufficient additional disclosure to remedy the Chang et al. shortcomings. Carpenter et al. do not teach applicants' copolymer surfactant, or a colorant composition containing same, or the viscosity stabilization prescribed in applicants' claims. Consequently, the Carpenter et al. teachings would not have allowed one of ordinary skill in the art to predict the claimed viscosity stabilization. It follows that the combination of Carpenter et al. with Chang et al. "teaches away"; thus, applicants' invention as claimed would have been unexpected and nonobvious.

(C) Robinson in view of Chang et al. – The Examiner cites *In re Lindner*, 457 F.2d 506, 509, 173 USPQ 356, 359 (C.C.P.A. 1972), for the proposition that "it is *prima facie* obvious to combine two ingredients, each of which is targeted by the prior art to be useful for the same purpose." The Examiner cites Robinson as the primary reference and therefore is understood to be contending that it would have been obvious to modify Robinson's disclosure – which the Examiner admits (Office Action, p.4) "fails to disclose the use of its thickener in [a] composition comprising the thickening copolymer and a pigment" – by changing the environment for the "thickening copolymer" from that of Robinson to the "colorant composition" claimed by applicants. At the threshold, it is urged that there is insufficient basis upon which to change the environment posited by Robinson to the one disclosed by Chang et al., as there is no showing that substituting an environment in which the Chang et al. thickener works

(pigment dispersions), for a different environment in which the Robinson thickener is useful, would be thought to afford (with a reasonable chance of success) consistent behavior by the Robinson thickener. Thus, applicants urge that the combination of references is unjustified and disagree with the Examiner's assumption that a *prima facie* case has been established. Furthermore, and in any event, there is absolutely no disclosure in the Robinson patent (1) of the pigment dispersion of Chang et al., not to mention the colorant composition defined by applicants in the claims, or (2) that use of the Robinson thickener when incorporated in such pigment dispersion or colorant composition would result in viscosity stabilization of a paint made from same. Consequently even if a *prima facie* case exists, the claimed invention involves an unexpected result that forecloses obviousness.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103 are requested.

Lastly, in respect of the obviousness-type double patenting rejection based on copending application Serial No. 11/319,840, applicants note the Examiner's contention

Given that US appl. '840 claims a colorant composition like presently claimed wherein the surfactant monomer of US appl. '840 is encompassed by the scope of the instantly claimed surfactant monomer, the instant claims are obvious over US appl. '840.

In the event the applications are found to be otherwise allowable, this rejection will be addressed in a manner sufficient to remove it.

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In view of the foregoing amendments and remarks, allowance of this application is solicited.

Respectfully submitted,

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